the like to be formed before transferring, and achieves reducing costs of a semiconductor film by employing a low-cost film substrate.

What is claimed is:

1. A method for manufacturing a display device comprising the steps of:
- forming a metal film comprising a metal over a first substrate;
- forming a first insulating film comprising oxygen over the metal film, wherein an oxide layer comprising the metal is formed by oxidation at an interface between the metal film and the first insulating film;
- forming a semiconductor element over the first insulating film;
- forming a second substrate over the semiconductor element; and
- separating the semiconductor element adhered to the second substrate from the first substrate.

2. The method according to claim **1**, wherein the metal film comprises one material selected from Ti, Ta, Mo, Nd, Ni, Co, Zr, Zn, Ru, Rh, Pd, Os, and Ir.

3. The method according to claim **1**, further performing a heat treatment at 400° C. or more after forming the oxide layer.

4. The method according to claim **1**, wherein the separation occurs in the oxide layer.

5. The method according to claim **1**, wherein the separation occurs between the oxide layer and the metal film.

6. The method according to claim **1**, further comprising steps of:
- transferring the semiconductor element onto a third substrate;
- separating the second substrate from the semiconductor element; and
- forming a fourth substrate over the semiconductor element after the separation of the second substrate,
- wherein the third substrate and the fourth substrate are flexible substrates.

7. The method according to claim **1**, wherein a film thickness of the oxide layer is 0.1 nm to 5 nm.

8. The method according to claim **1**, wherein the oxide layer includes crystals arranged in one direction.

9. The method according to claim **1**, wherein the semiconductor element comprises a semiconductor film.

10. The method according to claim **1**, further forming a second insulating film comprising nitrogen over the first insulating film.

11. A method for manufacturing a display device comprising the steps of:
- forming a metal film comprising tungsten over a first substrate;
- forming a first insulating film comprising oxygen over the metal film, wherein an oxide layer comprising the tungsten is formed by oxidation at an interface between the metal film and the first insulating film;
- forming a semiconductor element over the first insulating film;
- forming a second substrate over the semiconductor element; and
- separating the semiconductor element adhered to the second substrate from the first substrate.

12. The method according to claim **11**, wherein the separation occurs in the oxide layer.

13. The method according to claim **11**, wherein the separation occurs between the oxide layer and the metal film.

14. A method for manufacturing a display device comprising the steps of:
- forming a metal film comprising tungsten over a first substrate;
- performing a plasma treatment to form an oxide layer over the metal film;
- forming a first insulating film comprising oxygen over the metal film;
- forming a semiconductor element over the first insulating film;
- forming a second substrate over the semiconductor element; and
- separating the semiconductor element adhered to the second substrate from the first substrate.

15. The method according to claim **14**, wherein the separation occurs in the oxide layer.

16. The method according to claim **14**, wherein the separation occurs between the oxide layer and the metal film.

17. A method for manufacturing a display device comprising the steps of:
- forming a metal film comprising tungsten over a first substrate;
- forming a first insulating film comprising oxygen over the metal film, wherein an oxide layer comprising the tungsten is formed by oxidation at an interface between the metal film and the first insulating film;
- performing a heat treatment to increase a proportion of WO_2 in the oxide layer;
- forming a semiconductor element over the first insulating film;
- forming a second substrate over the semiconductor element; and
- separating the semiconductor element adhered to the second substrate from the first substrate.

18. The method according to claim **17**, wherein the separation occurs in the oxide layer.

19. The method according to claim **17**, wherein the separation occurs between the oxide layer and the metal film.

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